
2013 Sensorimotor Risk Standing Review Panel Status Review

Statement of Task for:

Risk of Impaired Control of Spacecraft, Associated Systems and Immediate Vehicle Egress Due to Vestibular/Sensorimotor Alterations Associated with Space Flight

Comments to the Human Research Program, Chief Scientist

2013 Sensorimotor Risk Standing Review Panel (SRP) Status Review WebEx/teleconference
Participants:

SRP Members:

Malcolm Cohen, Ph.D. (chair) – NASA Ames Consultant (retired)
Susan Herdman, Ph.D. – Emory University
John Krakauer, M.D. – The Johns Hopkins Hospital
James Lackner, Ph.D. – Brandeis University

National Space Biomedical Research Institute (NSBRI):

Tracy Johnson

NASA Johnson Space Center (JSC):

David Baumann
Jacob Bloomberg, Ph.D.
Linda Loerch
Ajitkumar Mulavara, Ph.D.
Peter Norsk, M.D.
Michele Perchonok, Ph.D.
Brian Peters, Ph.D.
Millard Reschke, Ph.D.
Rachael Seidler, Ph.D. (funded PI at the University of Michigan)
Cedric Senter, M.D.
Mark Shelhamer, Sc.D.
Susan Steinberg, Ph.D.
Lisa Stephenson
Laura Taylor, Ph.D.
Scott Wood, Ph.D. (funded PI at Azusa University)

NASA Research and Education Support Services (NRESS):

Tiffin Ross-Shepard

On December 11, 2013, the Sensorimotor Risk SRP, participants from the JSC, the NSBRI, and NRESS participated in a WebEx/teleconference. The purpose of the call (as stated in the Statement of Task) was to allow the SRP members to:

1. Receive an update by the Human Research Program (HRP) Chief Scientist or Deputy Chief Scientist on the status of NASA's current and future exploration plans and the impact these will have on the HRP.
2. Receive an update on any changes within the HRP since the 2012 SRP meeting.
3. Receive an update by the Element or Project Scientist(s) on progress since the 2012 SRP meeting.
4. Participate in a discussion with the HRP Chief Scientist, Deputy Chief Scientist, and the Element regarding possible topics to be addressed at the next SRP meeting.

Based on the presentations and the discussion during the WebEx/teleconference, the SRP would like to relay the following information to Dr. Shelhamer, the HRP Chief Scientist.

- The SRP thinks the general quality of the presentations and the scope of the materials that were summarized in the presentations was excellent.
- The WebEx/teleconference provided an important and timely opportunity for the SRP members to get a comprehensive overview of where the sensorimotor discipline now stands and where it is going. The SRP would like more time than is afforded during a teleconference to go into the various experiments and their results and the motivations for particular tasks. The SRP thinks it would be beneficial to have the 2014 SRP meeting occur via a site visit to allow for this type of interaction.
- The SRP thinks that it would be appropriate for the researchers to be aware of age-related changes in non-astronaut subjects as a comparison group. The ages of the astronaut core is beginning to be more variable and where possible, the SRP thinks care should be taken to compare the study values to age-related values (e.g., posturography, dynamic visual acuity, and any other age-related reference values that have been developed).
- The SRP thinks the small "n" initiative is clearly important for any research that is challenged by a limited availability of subjects and thinks the HRP is certainly challenged as far as actual in-flight and post-flight data are concerned. The SRP sincerely hopes that this effort will continue to receive the continuing support that it deserves.
- The SRP thinks the joint U.S./Russian program of immediate $R = 0$ and repeated post-flight testing that is currently being undertaken by Drs. Reschke and Kozlovskya (Field Test project) should be strongly supported. The SRP thinks this set of studies holds great promise for providing much needed information about how severe are the immediate effects of transitioning from microgravity back to terrestrial gravity, and about how long-lasting are several specific untoward changes induced by microgravity. It is extremely important to understand the natural time-course of these effects, as well as how they can be mitigated by various intervention strategies. The SRP looks forward to seeing more results from these studies.